

Appendix
Secondhand Smoke Exposure and Stroke: The Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study
Malek et al.

Appendix Table 1. Demographic and Clinical Characteristics of REGARDS Participants by Exposure to Secondhand Smoke and Smoking History

Demographic characteristic	SHS Exposure ^b (<i>n</i> =5,081)			No SHS Exposure (<i>n</i> =16,662)		
	Never smokers ^b (<i>n</i> =2,413) <i>n</i> (%), mean \pm SD, median (range)	Former smokers ^a (<i>n</i> =2,668) <i>n</i> (%), mean \pm SD, median (range)	<i>p</i> -value	Never smokers ^a (<i>n</i> =9,251) <i>n</i> (%), mean \pm SD, median (range)	Former smokers ^b (<i>n</i> =7,411) <i>n</i> (%), mean \pm SD, median (range)	<i>p</i> -value
Age (years)	61.6 \pm 9.0	64.0 \pm 8.3	<0.001	64.9 \pm 9.9	66.5 \pm 8.9	<0.001
45-64	1,569 (65)	1,454 (55)	<0.001	4,692 (51)	3,182 (43)	<0.001
\geq 65	844 (35)	1,214 (46)		4,559 (49)	4,229 (57)	
African-American	1,118 (46)	1,113 (42)	0.001	3,512 (38)	2,594 (35)	<0.001
Female	1,588 (66)	1,087 (41)	<0.001	5,398 (64)	3,345 (45)	<0.001
Region						
Belt	1,426 (59)	1,435 (54)	<0.001	5,155 (56)	4,032 (54)	0.09
Non-belt	987 (41)	1,233 (46)		4,096 (44)	3,379 (46)	
Education						
<High school	225 (9)	352 (13)	<0.001	846 (9)	783 (11)	<0.001
High school graduate	712 (30)	760 (29)		2,160 (23)	1,733 (23)	
Some college	651 (27)	783 (29)		2,268 (25)	2,080 (28)	
\geq College graduate	825 (34)	773 (29)		3,970 (43)	2,813 (38)	
Income, \$						
<20,000	428 (18)	437 (16)	0.03	1,369 (15)	1,061 (14)	<0.001
20,000-34,000	583 (24)	675 (25)		2,075 (22)	1,729 (23)	
35,000-74,000	772 (32)	923 (35)		2,797 (30)	2,434 (33)	
\geq 75,000	400 (17)	369 (14)		1,814 (20)	1,359 (18)	
Refused	230 (10)	264 (10)		1,196 (13)	828 (11)	
Alcohol consumption						
None	1,559 (65)	1,331 (50)	<0.001	6,553 (71)	3,958 (53)	<0.001

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Moderate	751 (31)	1,099 (41)	0.37	2,417 (26)	2,991 (40)	0.75
Heavy	65 (3)	179 (7)		179 (2)	317 (4)	
Reside with regular smoker	591 (25)	625 (51)		516 (6)	422 (6)	
Exercise			0.001			0.003
None	724 (30)	809 (30)		2,922 (32)	2,355 (32)	
1-3 times/wk	1,001 (42)	972 (36)		3,471 (38)	2,594 (35)	
≥ 4 times/wk	658 (27)	849 (32)		2,745 (30)	2,368 (32)	
Clinical characteristic						
Atrial fibrillation	191 (8)	212 (8)	0.54	624 (7)	678 (9)	<0.001
BMI (kg/m ²)	30.2 \pm 6.3	30.1 \pm 5.9		29.3 \pm 6.4	29.4 \pm 5.8	
Underweight	15 (1)	12 (0.4)		81 (1)	45 (1)	
Normal	478 (20)	445 (17)	0.002	2,348 (25)	1,582 (21)	<0.001
Overweight	830 (34)	1,043 (39)		3,304 (36)	2,962 (40)	
Obese	1,071 (44)	1,141 (43)		3,463 (37)	2,783 (38)	
Waist circumference (cm)	96.5 \pm 16.7	99.6 \pm 14.8	<0.001	94.1 \pm 15.8	97.4 \pm 14.9	<0.001
Cardiovascular disease history	264 (11)	508 (19)	<0.001	1,179 (13)	1,449 (20)	<0.001
Diabetes	507 (22)	608 (24)	0.13	1,634 (18)	1,508 (21)	<0.001
C-reactive protein (mg/L) (IQR)	2.3 (4.3)	2.3 (4.0)	0.995	2.0 (3.8)	2 (3.7)	0.03
White blood cell count	5.7 \pm 1.8	6.1 \pm 6.9	0.009	5.6 \pm 2.0	5.8 \pm 2.2	<0.001
Systolic blood pressure (mmHg)	127.0 \pm 16.6	128.4 \pm 16.4	0.004	126.1 \pm 16.2	127.4 \pm 15.9	<0.001

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Hypertension	1,416 (59)	1,605 (60)	0.26	5,019 (56)	4,260 (58)	<0.001
Hypertension, SR	1,418 (59)	1,569 (53)	0.90	4,291 (53)	4,186 (57)	<0.001
Dyslipidemia	1,279 (55)	1,640 (64)	<0.001	4,809 (54)	4,414 (62)	<0.001
Antihypertensive medication use						
Ever	1,330 (55)	1,479 (55)	0.39	4,625 (50)	3,962 (54)	<0.001
Current	1,238 (54)	1,396 (54)	0.52	4,357 (49)	3,722 (52)	<0.001
Framingham Stroke Risk Score	7.7 \pm 9.3	9.3 \pm 9.0	<0.001	8.9 \pm 10.1	10.4 \pm 10.3	<0.001
Left ventricular hypertrophy	263 (11)	254 (10)	0.10	948 (10)	673 (9)	0.01

SHS, secondhand smoke; \$, U.S. dollar; wk, week; IQR, interquartile range; SR, self-reported.

^a Secondhand smoke exposure was defined as >1 hour per week in close contact with a smoker(s) in the past year.

^b No secondhand smoke exposure was defined as 0 to 1 hours per week in close contact with a smoker(s) in the past year.

Note: Boldface indicates statistical significance ($p < 0.05$).

Appendix Table 2. Association of Secondhand Smoke (SHS) Exposure (Continuously) and Stroke among All Participants and Never and Former Smokers

Secondhand smoke exposure (in past year)						
Any Stroke	No. of Events	Model 1 Unadjusted	Model 2^a	Model 3^b	Model 4^c	Model 5^d
		HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)
Overall ^e	428	1.03 (1.01, 1.06)	1.03 (1.00, 1.06)	1.03 (1.00, 1.07)	1.03 (1.00, 1.07)	1.04 (1.01, 1.07)
Never smokers	217	1.03 (0.99, 1.08)	1.04 (0.99, 1.09)	1.03 (0.99, 1.08)	1.03 (0.99, 1.08)	1.04 (0.99, 1.09)
Former smokers ^f	211	1.02 (0.98, 1.06)	1.03 (0.99, 1.07)	1.04 (1.00, 1.08)	1.04 (1.00, 1.08)	1.04 (1.00, 1.08)
Secondhand smoke exposure (in past year)						
Ischemic Stroke	No. of Events	Model 1 Unadjusted	Model 2^a	Model 3^b	Model 4^c	Model 5^d
		HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)
Overall ^e	352	1.02 (0.98, 1.06)	1.02 (0.99, 1.06)	1.02 (0.98, 1.06)	1.02 (0.99, 1.06)	1.03 (0.99, 1.07)
Never smokers	184	1.02 (0.96, 1.08)	1.02 (0.96, 1.08)	1.01 (0.95, 1.08)	1.01 (0.95, 1.08)	1.02 (0.96, 1.08)
Former smokers ^f	168	1.02 (0.97, 1.07)	1.03 (0.98, 1.08)	1.03 (0.99, 1.09)	1.04 (0.99, 1.09)	1.04 (0.99, 1.09)
Secondhand smoke exposure (in past year)						
Hemorrhagic Stroke	No. of Events	Model 1 Unadjusted	Model 2^a	Model 3^b	Model 4^c	Model 5^d
		HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)
Overall ^e	50	1.07 (1.01, 1.14)	1.09 (1.02, 1.16)	1.10 (1.03, 1.17)	1.10 (1.03, 1.17)	1.10 (1.03, 1.17)
Never smokers	23	1.09 (0.99, 1.19)	1.10 (1.00, 1.21)	1.08 (0.98, 1.19)	1.07 (0.97, 1.18)	1.09 (0.97, 1.22)
Former smokers ^f	27	1.06 (0.99, 1.15)	1.08 (0.99, 1.17)	1.15 (1.03, 1.29)	1.16 (1.03, 1.31)	1.19 (1.04, 1.36)

HR, hazard ratio

^a Model 2: Adjusted for demographics (age, race, sex, age*race), SES factors (education [\leq high school vs. $>$ high school], and income [$<$ \$35,000 vs. \geq \$35,000]).

^b Model 3: Adjusted for demographics, SES factors, and Framingham Stroke Risk Score factors (diabetes, cardiovascular disease history, atrial fibrillation, current antihypertensive medication use, systolic blood pressure [SBP], and left ventricular hypertrophy).

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^c Model 4: Adjusted for demographics, SES factors, Framingham Stroke Risk Score factors, and C-reactive protein (CRP).

^d Model 5: Adjusted for demographics, SES factors, Framingham Stroke Risk Score factors, BMI, and lifestyle/behavioral factors (physical activity [none vs. ≥ 1 time per week] and weekly alcohol consumption [ever vs. never]).

^e Overall models 3-5 also adjusted for smoking history (former vs. never).

^f Models 3-5 for former smokers adjusted for pack years smoked.

Note: HRs are presented for a 5 hour unit change. Bolded point estimates indicate statistical significance at $p < 0.05$.